AKG.WIRELESS

WIRELESS MICROPHONE SYSTEM

WMS4000 wireless microphone system PS 4000 + antenna system

Bedienungsanleitung . . . . . S. 2
Bitte vor Inbetriebnahme des Gerätes lesen!

User Instructions. . . . . p. 11
Please read the manual before using the equipment!

Mode d'emploi. . . . . p. 20
Veuillez lire cette notice avant d'utiliser le système!

Istruzioni per l'uso . . . . . p. 29
Prima di utilizzare l'apparecchio, leggere il manuale

Modo de empleo . . . . . p. 38
¡Sirvase leer el manual antes de utilizar el equipo!

Instruções de uso . . . . . p. 47
Por favor leia este manual antes de usar o equipamento!

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FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Parts 74, 15, and 90 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded cables and I/O cords must be used for this equipment to comply with the relevant FCC regulations.
Changes or modifications not expressly approved in writing by AKG Acoustics may void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1 Safety and Environment

1.1 Safety

1. Do not spill any liquids on the equipment and do not drop any objects through the ventilation slots in the equipment.
2. The equipment may be used in dry rooms only.
3. The equipment may be opened, serviced, and repaired by authorized personnel only. the equipment contains no user-serviceable parts.
4. Before connecting the equipment to power, check that the AC mains voltage stated on the supplied power supply is identical to the AC mains voltage available where you will use the equipment.
5. Operate the equipment with the supplied 12 VDC power supply. Using adapters with an AC output and/or a different output voltage may cause serious damage to the equipment.
6. If any solid object or liquid penetrates into the equipment, shut down the sound system immediately. Disconnect the power supply from the power outlet immediately and have the equipment checked by AKG service personnel.
7. If you will not use the equipment for a long period of time, disconnect the power supply from the power outlet. Please note that the equipment will not be fully isolated from power when you set the power switch to OFF.
8. Do not place the equipment near heat sources such as radiators, heating ducts, or amplifiers, etc. and do not expose it to direct sunlight, excessive dust, moisture, rain, mechanical vibrations, or shock.
9. To avoid hum or interference, route all audio lines, particularly those connected to the microphone inputs, away from power lines of any type. If you use cable ducts, be sure to use separate ducts for the audio lines.
10. Clean the equipment with a moistened (not wet) cloth only. Be sure to disconnect the power supply from the power outlet before cleaning the equipment! Never use caustic or scouring cleaners or cleaning agents containing alcohol or solvents since these may damage the enamel and plastic parts.
11. Use the equipment for the applications described in this manual only. AKG cannot accept any liability for damages resulting from improper handling or misuse.

1.2 Environment

1. The power supply will draw a small amount of current even when the equipment is switched off. To save energy, disconnect the power supply from the power outlet if you will leave the equipment unused for a long period of time.
2. When scrapping the equipment, separate the case, circuit boards, and cables, and dispose of all components in accordance with local waste disposal rules.

2 Description

2.1 Introduction

Thank you for purchasing an AKG product. This Manual contains important instructions for setting up and operating your equipment. Please take a few minutes to read the instructions below carefully **before operating the equipment**. Please keep the Manual for future reference. Have fun and impress your audience!

2.2 Unpacking

1 PS 4000 antenna splitter

1 12 VDC power supply

1 rack mount kit

Check that the packaging contains all of the components listed above. Should anything be missing, please contact your AKG dealer.

2.3 Optional Accessories

- **SRA 1** passive directional antenna

- **SRA 2 B** active directional antenna

- **RA 4000 B** active omnidirectional antenna

- **AB 4000** antenna booster with N connectors (AB 4000/N) or BNC connectors (AB 4000/BNC)

- **MK PS** antenna cables

- **PSU 4000** central power supply

- **ASU 4000** remote power adapter

2.4 Description

The PS 4000 is an antenna splitter for setting up UHF multichannel systems with up to four SR 4000 receivers per antenna splitter. (Note that the number of channels you can actually operate simultaneously depends on local frequency plans.)
The PS 4000 features two rear panel antenna inputs for connecting either SRA 1 passive antennas or SRA 2B or RA 4000 B active antennas with built-in boosters. Each antenna input provides a 12 VDC supply voltage for powering up to three active antenna components, e.g., one active antenna and two AB 4000 antenna boosters. Also located on the rear panel are two sets of four antenna output connectors for up to four SR 4000 diversity receivers and two additional antenna outputs for feeding the antenna signal to several additional PS 4000 antenna splitters.
The PS 4000 is housed in a 1 U, half-rack case so you can mount two antenna splitters in a single rack space.
The PS 4000 can be powered by the included power supply. For systems with more than four channels, we recommend using an optional PSU 4000 central power supply for three antenna splitters each.
Both the antenna boosters and the antenna splitter are wideband devices for the entire UHF band of the WMS 4000 system.

2.4.1 Front Panel

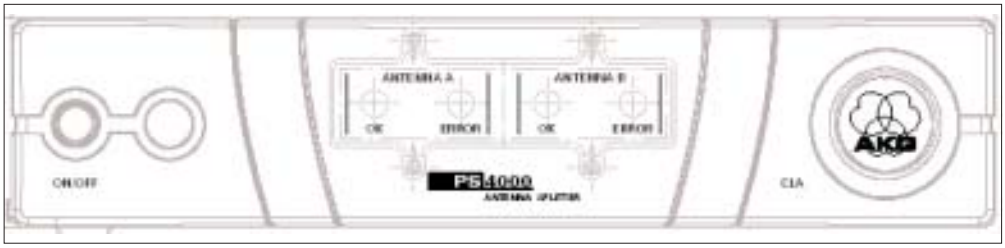


Fig. 1: PS 4000 front panel.

The antenna splitter front panel provides the following controls and indicators:

ON/OFF: Press this key to switch power to the unit ON. Press again to switch power to the unit OFF.

ANTENNA A, ANTENNA B: The blue OK LED will be lit for as long as the ANTENNA A IN/ANTENNA B IN input provides the correct supply voltage for active components.
Should the supply voltage at an input be shorted or fail (drop below 2 V) the OK LED for that input will extinguish and the red ERROR LED be lit instead.

Note:

The two OK LEDs do NOT indicate the operating status of the connected antenna booster and therefore will not go out when you disconnect an antenna cable.

CLA: The round plate with the AKG logo covers a bank of three DIP switches for matching the antenna inputs (ANTENNA A IN, ANTENNA B IN) to the length of the connected cable run.

Refer to Table 1 on page 17.

2.4.2 Rear Panel

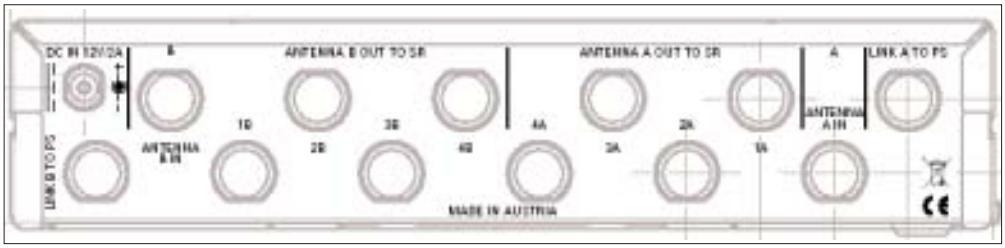


Fig. 2: PS 4000 rear panel.

The PS 4000 rear panel provides the following inputs and outputs:

DC IN 12 V/2A: Input jack for the standard power supply or optional PSU 4000 central power supply.

ANTENNA A IN, ANTENNA B IN: BNC input connectors for SRA 1, SRA 2 B, or RA 4000 B remote antennas. Since the SR 4000 is a diversity receiver you will need two receiving antennas (optional). Each antenna input provides a 12 VDC supply voltage for an active antenna.

ANTENNA A OUT TO SR: The four BNC connectors 1A through 4A deliver the antenna signals for the A inputs of up to four SR 4000 diversity receivers. All unused outputs are electrically terminated automatically.

ANTENNA B OUT TO SR: The four BNC connectors 1B through 4B deliver the antenna signals for the B inputs of up to four SR 4000 diversity receivers. All unused outputs are electrically terminated automatically.
In addition to the antenna signals, outputs 1A through 4A and 1B through 4B provide a 12 VDC supply voltage for the connected SR 4000 receivers.

Important!

The only way to ensure that outputs 1A through 4B will provide sufficient current to power the connected receivers is to connect the antenna splitter to an optional PSU 4000 central power supply.
If you power the PS 4000 antenna splitter from its standard power supply, make sure to power each receiver from its own standard power supply, too. If you connect receivers to the antenna splitter without connecting each receiver to a power supply and AC power, the antenna splitter's standard power supply may be damaged due to overload.

2 Description

See also Wiring Diagrams figs. 10 through 13.

LINK A TO PS, LINK B TO PS: These two BNC outputs carry the RF signal of the two antennas A and B. You can connect the LINK outputs to the antenna inputs of another PS 4000 antenna splitter to daisy-chain several antenna splitters.
Note that you will need one optional PSU 4000 central power supply each to power three PS 4000 antenna splitters.

2.5 PSU 4000 Central Power Supply (optional)

The PSU 4000 central power supply delivers a 12 VDC, 2 A secondary voltage for powering three PS 4000 antenna splitters and the receivers (12 max.) connected to the antenna splitters. For details refer to the PSU 4000 user manual.

2.6 Receiving Antennas (optional)

One passive directional antenna, one active directional antenna, and one active omnidirectional antenna are available for the PS 4000 antenna system. All antennas are wideband devices for the entire WMS 4000 UHF band.
The active antennas are powered by the PS 4000 antenna splitter via the antenna cables. For complex systems with long antenna cables, we recommend powering each active antenna from a PSU 4000 central power supply via an ASU 4000 remote power adapter.

2.6.1 SRA 1

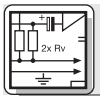
The SRA1 is a remote UHF antenna with a hypercardioid polar pattern. The SRA1 will even operate perfectly as close to the floor or ceiling as 15 cm (6 in.). For details, refer to the SRA 1 User Manual.

2.6.2 SRA 2 B

The SRA 2 B is an active directional antenna with a rugged, water-resistant case designed specifically for indoor and outdoor use at a distance from the performance area. An integrated high-performance antenna booster allows you to position the antenna up to 100 m (330 ft.) away from the receiver. Using RG213 antenna cables and two AB 4000 antenna boosters in series, you can set up the SRA 2 B even 200 m (660 ft.) away from the receiver.
The antenna provides a BNC output, status LED, and integrated stand adapter. An optional laser pointer makes it easy to align the antenna precisely with the performance area.

2.6.3 RA 4000 B

The RA 4000 B is an active omnidirectional antenna with a rugged, water-resistant case designed specifically for indoor and outdoor use in close proximity to the performance area. An integrated high-performance antenna booster allows you to position the antenna up to 100 m (330 ft.) away from the receiver. Using RG213 antenna cables and two AB 4000 antenna boosters in series, you can set up the SRA 2 B even 200 m (660 ft.) away from the receiver.
The antenna provides a BNC output, status LED, and integrated stand adapter.



3 Getting Started

3.1 Rack Mounting a Single Antenna Splitter
Refer to fig. 8.

1. Unscrew the four rubber feet (1) from the antenna splitter bottom panel.
2. Unscrew the two fixing screws (2) from each side panel.
3. Use the fixing screws (2) to screw the short bracket (3) to one side panel and the long bracket (4) to the other side panel. The brackets are contained in the supplied rack mounting kit.
4. Install the antenna splitter in your rack.

3.2 Rack Mounting Two Antenna Splitters Side by Side.
Refer to fig. 9.

1. Unscrew the four rubber feet (1) from each antenna splitter's bottom panel and remove the screws (5) from the rubber feet (1).
2. Unscrew the two fixing screws (2) from the right-hand side panel of one antenna splitter and from the left-hand side panel of the other antenna splitter.
3. Remove the plastic covers (3) from the side panels with the fixing screws (2) still on.
4. Insert one connecting strip (4) into each free slot in the side panel of the first antenna splitter, making sure to align the hole in each connecting strip (4) with the appropriate threaded hole in the antenna splitter bottom panel.
5. Fix the two connecting strips (4) on the first antenna splitter using two of the screws (5) you removed from the rubber feet.
6. To join the two antenna splitters, slide the connecting strips (4) on the first antenna splitter through the free slots in the side panel of the second antenna splitter. Make sure to align the hole in each connecting strip (4) with the appropriate threaded hole in the bottom panel of the second antenna splitter.
7. Fix the two connecting strips (4) on the second antenna splitter using two of the screws (5) you removed from the rubber feet.
8. Screw a short bracket (6) to the outer side panel of each antenna splitter using for each bracket two of the screws (2) you removed from the antenna splitter side panels.
9. Install the antenna splitters in your rack.

Note: Be sure to keep the remaining screws (5) for later use.

3.3 Setting Up Antennas

The following hints on placing antennas apply to both single-channel and multichannel systems with any number of channels.

3.3.1 Placement

Reflections off metal parts, walls, ceilings, etc. or the shadow effects of musicians and other people may weaken or cancel the direct transmitter signal. For best results, place the antennas as follows:

1. Place the antennas near the performance area (stage). Make sure, though, that the transmitter will never get any closer to the antennas than 16 ft. (5 m). Place the two antennas at least 8 inches. (20 cm) from each other.
2. There should always be a direct line of sight between the transmitter and antennas.
3. Place the receiver at least 5 ft. (1.5 m) away from any big metal objects, walls, scaffolding, ceilings, etc.
4. Do not place antennas in wall recesses.
5. Place antennas at least 5 ft. (1.5 m) away from any equipment that may emit RF radiation such as lighting racks, fluorescent lamps, digital effects units, or PCs.
6. If you set up two antennas side by side (e.g., for diversity reception), check that the two antennas are spaced at least 20 cm (8 in.) apart.

3.3.2 Mounting Antennas on Floor Stands

When mounting the antennas on floor stands, be sure to proceed as follows:

1. Use the supplied SA 63 or the integrated stand adapter to mount the antenna on the boom of a boom stand.
2. Pull the boom out all the way to one side to make sure the antenna will be at least 28 inches (70 cm) away from the stand.
3. Extend the stand high enough to place the boom at least 6 ft. (1.8 m) above the floor.
4. Wind the antenna cable around the boom. Do not allow the cable to sag below the boom because this may degrade the reception quality.

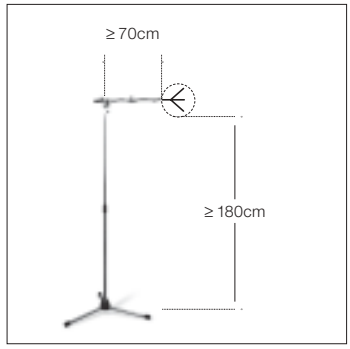


Fig. 3: Antenna mounted on floor stand

3.3.3 Wall/Ceiling Mounting

If you mount your antennas on a wall or ceiling, be sure to keep the following minimum distances:

1. Mount the antenna at least 10 cm (4 in.) in front of and at a minimum lateral distance of 50 cm (20 in.) from any walls or other plane surfaces, metal grids, or metal scaffolding.

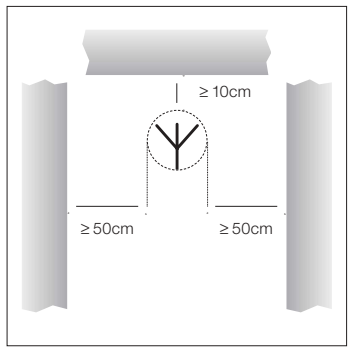


Fig. 4: Minimum distances from plane surfaces.

2. Make sure the antenna will sit at least 15 cm (6 in.) above the floor or 50 cm (20 in.) from the ceiling (or 15 cm (6 in.) if you route the cable to the antenna from above).

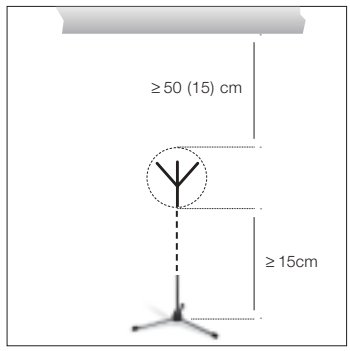


Fig. 5: Minimum distances from floor and ceiling.

3.4 Connecting Antennas
3.4.1 Single-channel System with SRA 1 Passive Antennas

For a single-channel system, you need no antenna splitter. Connect the antennas to the receiver directly.

1. Measure the cable run between the SR 4000 receiver and each SRA 1 antenna.
2. Refer to Table 1 on page 17 to find out whether you will need to break the cable run down into several cables and insert one or two AR 4000 antenna boosters. Table 1 states the maximum acceptable cable lengths for RG58 and RG213 cables separately.

Refer to Table 1 on page 17 and fig. 6.

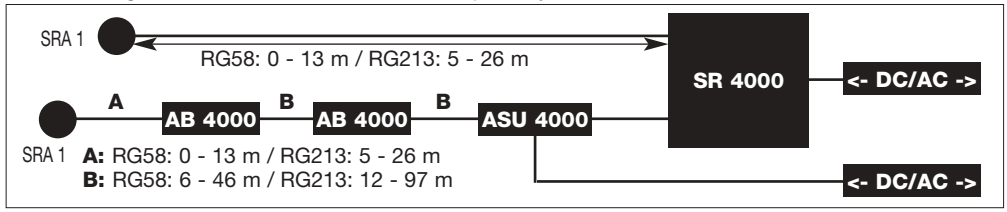


Fig. 6: Wiring a single-channel system with passive antennas and different antenna cable runs.

3. Connect an antenna cable to each antenna.

4. Referring to Table 1, connect the antennas to the antenna inputs on the SR 4000 receiver.
   If you need one or two AB 4000 antenna boosters, you will need to insert an ASU 4000 remote power adapter between the receiver and the first antenna booster.

Important!

5. Check that the AC mains voltage stated on the power supplies for the ASU 4000 and the receiver is identical to the AC mains voltage available where you will use your system. Using the power supplies with a different AC voltage may cause damage to the unit.

6. Connect the remote power adapter and the receiver to their respective power supplies and connect each power supply to a convenient power outlet.

3.4.2 Single-channel System with Active Antennas

Refer to Table 1 on page 17 and fig. 7.

1. Measure the cable run between the SR 4000 receiver and each active antenna.
2. Refer to Table 1 on page 17 to find out whether you will need to break the cable run down into several cables and insert one or two AR 4000 antenna boosters. Table 1 states the maximum acceptable cable lengths for RG58 and RG213 cables separately.

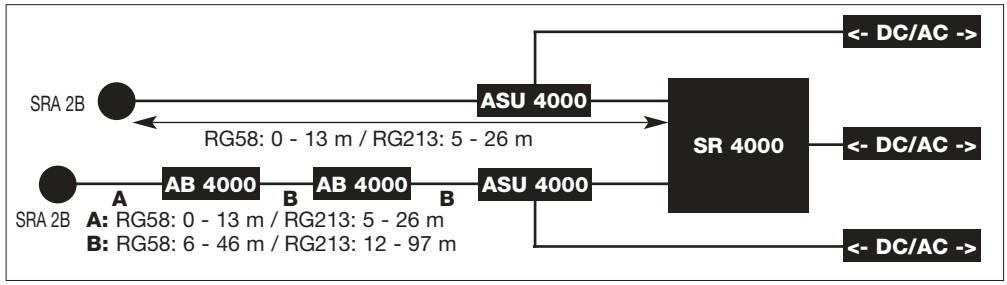


Fig. 7: Wiring a single-channel system with active antennas and different antenna cable runs.

3. Connect an antenna cable to each antenna.
4. Referring to Table 1, connect each antenna to one or two AB 4000 antenna boosters (if necessary), an ASU 4000 remote power adapter, and to the appropriate antenna input on the SR 4000 receiver.

Important!

5. Check that the AC mains voltage stated on the power supplies for the two ASU 4000s and the receiver is identical to the AC mains voltage available where you will use your system. Using the power supplies with a different AC voltage may cause damage to the unit.

6. Connect the remote power adapters and the receiver to their respective power supplies and connect each power supply to a convenient power outlet.

3.5 Multichannel Systems with PS 4000 Antenna Splitters

For wiring examples for multichannel systems, refer to figs. 10 through 13 on page 59.

When setting up a multichannel system, remember the following points:

1. You can connect up to four SR 4000 receivers to each PS 4000 antenna splitter.

Warning!

If you power both the antenna splitter and the receivers from their respective standard power supplies, make absolutely sure to connect the receiver power supplies to AC power before connecting the antenna splitter power supply to AC power.
Connecting the antenna splitter to power first may cause damage to the antenna splitter power supply due to the load presented by the receivers.

2. For large systems with up to 50 channels you can daisy-chain the required number of antenna splitters:
   - Connect the LINK outputs on the first antenna splitter to the ANTENNA IN connectors on the next antenna splitter and so on.
   - We recommend powering large systems from optional PSU 4000 central power supplies for three antenna splitters and four receivers each.

3. Each antenna input on the antenna splitter is capable of powering a maximum of three active components (e.g., RA 4000 B + 2 x AB 4000) via the antenna cables.
   In the following cases you will need an ASU 4000 remote power adapter to power active components (each ASU 4000 is capable of powering up to three active components, too):

   - The cable run from the antenna splitter to an active component is long enough to reduce the supply voltage below the acceptable minimum.

   - A device (e.g., an antenna combiner*) in the line between the PS 4000 and an active component interrupts the DC supply voltage across the antenna cable.

Note:

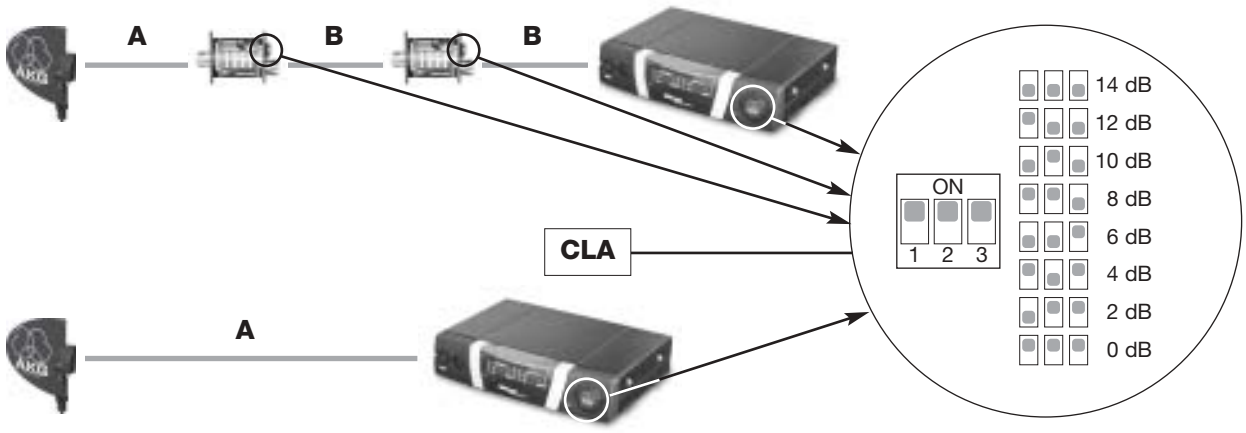
* The ZAPD 21 antenna combiner from Mini Circuit feeds the supply voltage through. Similar devices from other manufacturers may not do so.

   - You have used an antenna combiner to connect two antenna lines to the same antenna input. If you use three or more active components in one antenna line, insert an ASU 4000 remote power adapter between the antenna combiner and the first of the active components. If the number of active components in both lines totals more than three, be sure to insert an ASU 4000 remote power adapter into each line. The remote power adapter prevents the antenna splitter power supply from being overloaded.

3.6 CLA Switch Bank

The RF signal level at each antenna input on the antenna splitter(s) depends on the frequency band, antenna type, cable type, and cable length.
To ensure optimum signal level at the antenna input, set the CLA switches on each antenna booster and on the antenna splitter(s) as shown in Table 1 below.

1. Remove the cover of the CLA switch bank.
2. Set the three DIP switches as required for your frequency band, antenna model, cable type, and cable length.
3. Replace the cover.



	A SRA2B -> AB 4000 or PS 4000			A RA 4000 B ->AB 4000 or PS 4000			A SRA 1 -> AB 4000 or PS 4000			B AB 4000 -> AB 4000 or PS 4000		
BAND I + II	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)
	53 - 57	111 - 121	0	38 - 43	79 - 89	0	8 - 13	16 - 26	0	41 - 46	87 - 97	0
	48 - 53	100 - 111	2	33 - 38	68 - 79	2	3 - 8	5 - 16	2	36 - 41	76 - 87	2
	43 - 48	89 - 100	4	28 - 33	58 - 68	4	0 - 3		4	31 - 36	66 - 76	4
	38 - 43	79 - 89	6	23 - 28	47 - 58	6			6	26 - 31	55 - 66	6
	33 - 38	68 - 79	8	18 - 23	37 - 47	8			8	21 - 26	45 - 55	8
	28 - 33	58 - 68	10	13 - 18	26 - 37	10			10	16 - 21	34 - 45	10
	23 - 28	47 - 58	12	8 - 13	16 - 26	12			12	11 - 16	24 - 34	12
	18 - 23	37 - 47	14	3 - 8	5 - 16	14			14	6 - 11	13 - 24	14

	A SRA2B -> AB 4000 or PS 4000			A RA 4000 B ->AB 4000 or PS 4000			A SRA 1 -> AB 4000 or PS 4000			B AB 4000 -> AB 4000 or PS 4000		
BAND III + IV	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)
	50 - 55	105 - 115	0	36 - 40	75 - 85	0	7 - 12	15 - 25	0	39 - 44	83 - 93	0
	45 - 50	95 - 105	2	31 - 36	65 - 75	2	2 - 7	5 - 15	2	35 - 39	73 - 83	2
	40 - 45	85 - 95	4	26 - 31	55 - 65	4	0 - 2		4	30 - 35	63 - 73	4
	36 - 40	75 - 85	6	21 - 26	45 - 55	6			6	25 - 30	53 - 63	6
	31 - 36	65 - 75	8	17 - 21	35 - 45	8			8	20 - 25	43 - 53	8
	26 - 31	55 - 65	10	12 - 17	25 - 35	10			10	15 - 20	33 - 43	10
	21 - 26	45 - 55	12	7 - 12	15 - 25	12			12	11 - 15	23 - 33	12
	17 - 21	35 - 45	14	2 - 7	5 - 15	14			14	6 - 11	13 - 23	14

	A SRA2B -> AB 4000 or PS 4000			A RA 4000 B ->AB 4000 or PS 4000			A SRA 1 -> AB 4000 or PS 4000			B AB 4000 -> AB 4000 or PS 4000		
BAND V + VI	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)	RG58 (m)	RG213 (m)	CLA (dB)
	47 - 51	100 - 110	0	33 - 38	71 - 81	0	7 - 11	14 - 24	0	37 - 41	79 - 88	0
	42 - 47	90 - 100	2	29 - 33	62 - 71	2	2 - 7	5 - 14	2	32 - 37	69 - 79	2
	38 - 42	81 - 90	4	24 - 29	52 - 62	4	0 - 2		4	28 - 32	60 - 69	4
	34 - 38	71 - 81	6	20 - 24	43 - 52	6			6	23 - 28	50 - 60	6
	29 - 34	62 - 71	8	16 - 20	33 - 43	8			8	19 - 23	40 - 50	8
	24 - 29	52 - 62	10	11 - 16	24 - 33	10			10	14 - 19	31 - 40	10
	20 - 24	43 - 52	12	7 - 11	14 - 24	12			12	10 - 14	21 - 31	12
	16 - 20	33 - 43	14	2 - 7	5 - 14	14			14	6 - 10	12 - 21	14

Table 1: CLA DIP switch positions depending on frequency band, antenna, cable type, and cable length.

4 Operating Notes

4.1 General Hints

1. Be sure to assign a separate carrier frequency to each wireless channel (transmitter and receiver).
2. Do not operate two or more wireless channels on the same frequency at the same time and location. This would cause unwanted noise due to radio interference.

Important!

To prevent damage from overloading the antenna splitter power supply, always switch power to the various components of your system on and off in the order described in sections 4.2 and 4.3.

4.2 Systems with Distributed Power Supplies

4.2.1 Powering Up

1. Switch power to all transmitters ON.
2. Switch ON all receivers connected to the antenna splitter.
3. Press the ON/OFF key on the antenna splitter to switch power to the antenna splitter ON. The blue OK LEDs and the green status LEDs on the connected active components will illuminate.

4.2.2 Powering Down

1. Switch OFF all receivers connected to the antenna splitter.
2. Switch power to all transmitters OFF.
3. Press the ON/OFF key on the antenna splitter to switch power to the antenna splitter OFF. The blue OK LEDs and the green status LEDs on the connected active components will extinguish.

4.3 Systems with PS 4000 Central Power Supplies

4.3.1 Powering Up

1. Switch the PSU 4000 central power supply ON.
2. Switch power to all transmitters ON.
3. Press the ON/OFF key on the antenna splitter to switch power to the antenna splitter ON. The blue OK LEDs and the green status LEDs on the connected active components will illuminate.
4. Switch ON all receivers connected to the antenna splitter.

4.3.2 Powering Down

1. Switch OFF all receivers connected to the antenna splitter.
2. Switch power to all transmitters OFF.
3. Press the ON/OFF key on the antenna splitter to switch power to the antenna splitter OFF. The blue OK LEDs and the green status LEDs on the connected active components will extinguish.
4. Switch the PSU 4000 central power supply OFF.

5 Cleaning

Use a soft cloth moistened with water to clean the antenna splitter surfaces.

6 Troubleshooting

Problem	Possible Cause	Remedy
No sound.	1. Power supplies/PSU 4000 not connected to power outlet(s). 2. DC cables not connected or defective. 3. Antennas not connected. 4. Power supplies/PSU 4000 defective.	1. Connect power supplies/PSU 4000 to power outlet(s). 2. Connect or replace DC cables. 3. Connect antennas. 4. Contact your nearest AKG Service Center.
No or poor reception on individual channels.	1. Transmitter and/or receiver switched OFF. 2. Transmitter batteries down. 3. Power supply of receiver or feeder cable from PSU 4000 to receiver a) makes poor contact or b) is defective. 4. Transmitter and receiver of dead channel are tuned to different frequencies. 5. Transmitter or receiver defective.	1. Switch transmitter and/or receiver ON. 2. Replace transmitter batteries. 3. a) Check power supply or feeder cable connectors for secure fit or b) Replace power supply or feeder cable. 4. Tune transmitter and receiver to the same frequency. Refer to the transmitter and receiver Instruction Manuals. 5. Contact your nearest AKG Service Center.
Green LED on an active antenna component is dark.	1. Antenna cable not connected or makes poor contact. 2. Antenna cable defective. 3. Active antenna component defective.	1. Connect antenna cable or check connectors for secure fit. 2. Replace antenna cable. 3. Contact your nearest AKG Service Center.
One of the ERROR LEDs on the antenna splitter is lit.	1. Supply voltage for active antenna components shorted out. 2. Supply voltage for active antenna components too low because cable run is too long.	1. Check all cables and active antenna components connected to antenna splitter. 2. Refer to Table 1 to check cable lengths and use shorter cables or break down cable run and insert ASU 4000(s) (see also Wiring Diagrams).

PS 4000 Antenna Splitter	
Type:	2 x 1 to 4 SR 4000 + 2 x 1 PS (for daisy-chaining)
Carrier range:	650 MHz to 870 MHz
Attenuation:	+2, 0, -2, -4, -6, -8 dB switchable
RF inputs:	2 x BNC sockets, 50 ohms
RF outputs:	10 x BNC sockets, 50 ohms
Power requirement:	12 VDC
Size:	200 x 190 x 44 mm (7.8 x 7.5 x 1.7 in.)
Weight:	approx. 970 g (2.2 lbs.)

AB 4000 Antenna Amplifier	
Carrier range:	650 MHz to 870 MHz
Gain:	approx. 17 dB
RF input:	1 x BNC, 50 ohms
RF output:	1 x BNC, 50 ohms
Power requirement:	8 VDC, supplied through connecting cable from PS 4000 or ASU 4000
Size:	110 x 35 mm (4.3 x 1.4 in.)
Weight:	approx. 150 g (5.3 oz.)

RA 4000 B Omnidirectional Booster Antenna	
Carrier range:	650 to 870 MHz
Gain:	17, 15, 13, 11, 9, 7 dB switchable
RF input:	1 x BNC or N socket, 50 ohms
RF output:	1 x BNC or N socket, 50 ohms
Power requirement:	8 VDC, supplied through connecting cable from PS 4000 or ASU 4000
Size:	78 x 50 x 50 mm / 3.1 x 2 x 2 in. (BNC Version), 78 x 50 x 50 mm / 3.1 x 2 x 2 in. (N version)
Weight:	68 g (2.4 oz.)

SRA 1 Passive Directional Antenna	
Carrier range:	680 to 945 MHz
Antenna gain:	approx. 6 dB
Coverage angle:	70 °
Front-to-back ratio (180°):	13 dB min.
Off-axis attenuation (90° to 110°):	approx. 25 dB
Size:	152 x 65 mm (6 x 2.6 in.)
Weight:	180 g (6.4 oz.)

SRA 2 B Active Directional Antenna	
Carrier range:	650 to 870 MHz
Antenna Gain:	approx. 6 dB
Coverage angle:	70 °
Amplifier Gain:	approx. 17 dB
Size:	230 x 240 x 26 mm (9 x 9.5 x 1 in.)
Weight:	approx. 250 g (8.8 oz.)

ASU 4000 Remote Power Adapter	
Carrier range:	650 to 870 MHz
RF input:	1 x BNC or N socket, 50 ohms
RF output:	1 x BNC or N socket, 50 ohms
Power requirement:	12 VDC
Size:	78 x 50 x 50 mm / 3.1 x 2 x 2 in. (BNC Version), 78 x 50 x 50 mm / 3.1 x 2 x 2 in. (N version)
Weight:	167 g (5.9 oz.)

Dieses Produkt erfüllt nationale Vorschriften von Ländern in und außerhalb der EG. Für genauere Informationen wenden Sie sich bitte an Ihren Händler. **Lesen Sie vor Inbetriebnahme die Bedienungsanleitung sorgfältig.**	This product complies with national regulations of countries within and outside the EC. For details please contact your dealer. **Before operating the equipment read the user manual carefully.**

Hiermit erklärt AKG Acoustics GmbH, dass das Produkt **PS 4000** die wesentlichen Anforderungen und sonstigen einschlägigen Bestimmungen der Richtlinie **1999/5/EG** erfüllt.

AKG Acoustics GmbH hereby declares that the product **PS 4000** complies with the essential requirements and other relevant provisions of Directive **1999/5/EC**.

AKG Acoustics GmbH déclare que le produit **PS 4000** satisfait aux exigences essentielles et autres dispositions y relatives de la Directive **1999/5/CE**.

Con la presente AKG Acoustics GmbH dichiara che il prodotto **PS 4000** è conforme alle richieste essenziali e alle altre disposizioni pertinenti della Direttiva **1999/5/CE**.

AKG Acoustics GmbH declara que el producto **PS 4000** cumple los requisitos esenciales y otras disposiciones aplicables de la Directiva **1999/5/CE**.

A AKG Acoustics GmbH declara que o produto **PS 4000** cumpre os requisitos essenciais e as outras disposições relevantes da Directiva **1999/5/CE**.

AKG Acoustics GmbH verklaart hiermee dat het product **PS 4000** aan de essentiële eisen en overige desbetreffende bepalingen van de richtlijn **1999/5/EG** voldoet.

AKG Acoustics GmbH erklærer hermed at produktet **PS 4000** overholde de væsentliga krav samt andre relevante bestemmelser fra Direktiv **1999/5/EF**.

AKG Acoustics GmbH erklærer med dette, at produktet **PS 4000** oppfyller de vesentlige krav og andre relevante bestemmelser som fremgår av Direktiv **1999/5/EF**.

Härmed förklarar AKG Acoustics GmbH att produkten **PS 4000** uppfyller de väsentliga krav och andra relevanta bestämmelser som framgår av Direktiv **1999/5/EC.**

AKG Acoustics GmbH vakuuttaa, että tuotteemme **PS 4000** täyttää tarvittavat **1999/5/EC** direktiivin mukaiset vaatimukset.

AKG
A Harman International Company

DECLARATION OF CONFORMITY

Document No.336 / 12 - 2002
replaces No. /

Type of Product: Power Splitter

Brand, Model No.: **PS 4000**

Drawing-No.: 2996 Z 00..

Manufacturer: AKG Acoustics GmbH
A-1230 Wien, Lemböckgasse 21 - 25
AUSTRIA

We declare that the above mentioned product is in conformity with the following European Directive:

No. 99/5 EC;
Radio Equipment and
Telecommunications Terminal Equipment

The conformity is achieved by fulfilling the following European Standard(s):

EN 300422-2 V1.1.1 (07-2000); EN 301489-9 V1.1.1 (09-2000); EN 60065:1998

Product testing was carried out by:

MIKES BABT Product Service GmbH
Ohmstrasse 2-4
94342 Strasskirchen, Germany

City, Date: Wien, 19.12.2002

Manufacturer's Signature:

Managing Director
Dr. Hugo Lenhard-Backhaus

This declaration certifies the accordance with the above mentioned EC-Directive but does not assure certain attributes of the product.

issued:

EG-Konformitätserklärung **2996.CE1**

15.01.2003

CE

Fig. 8

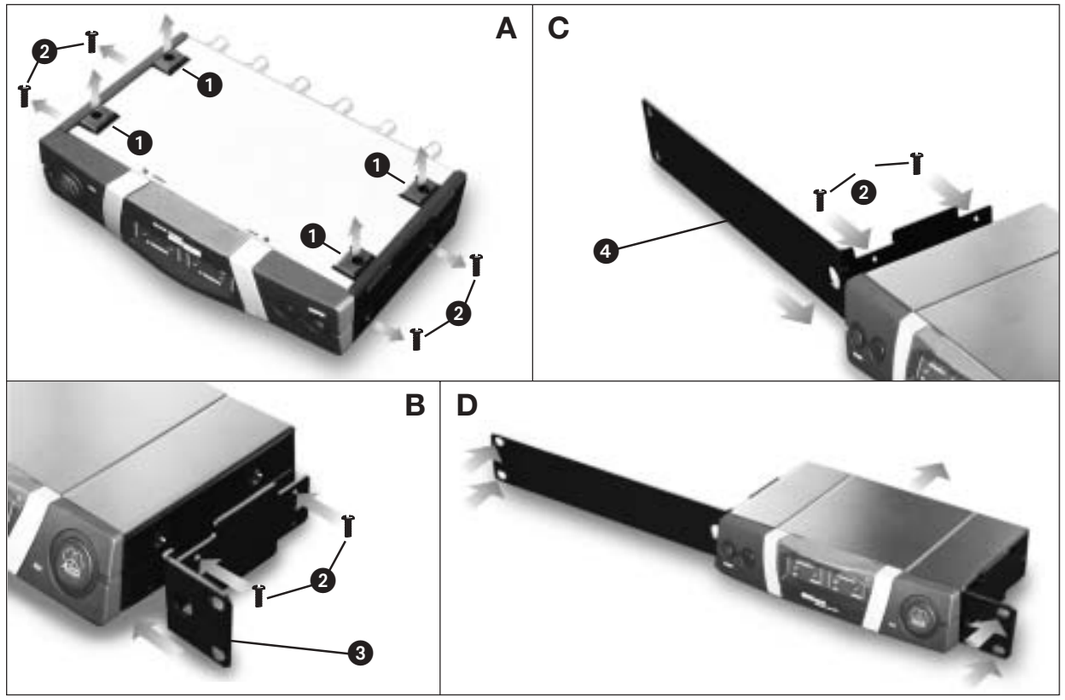
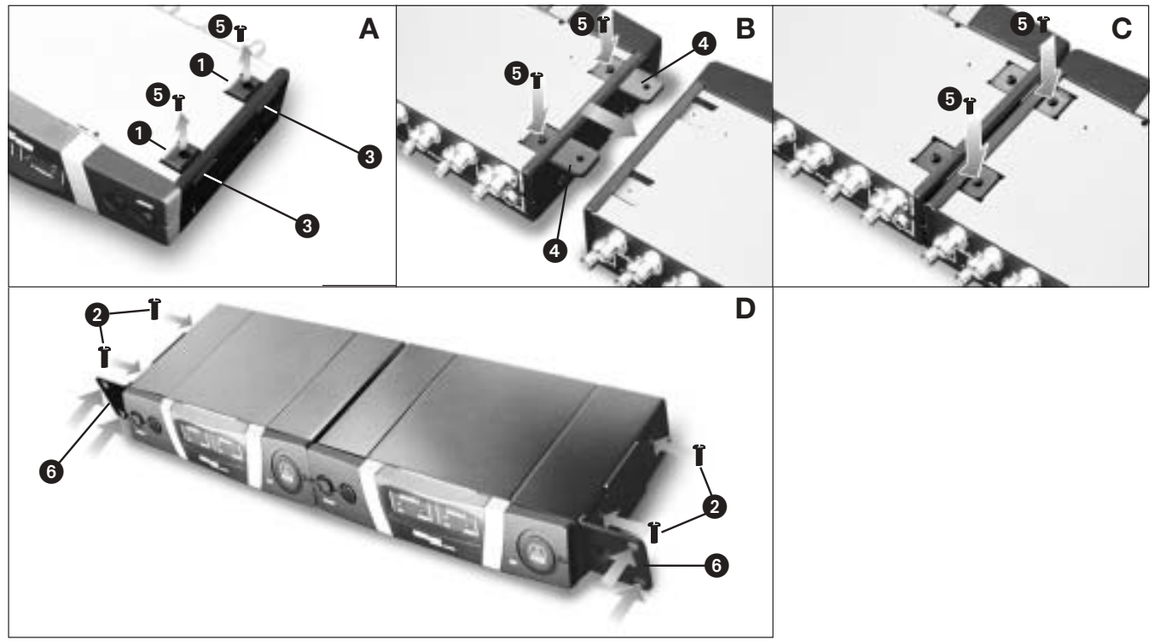


Fig. 9



PS 4000

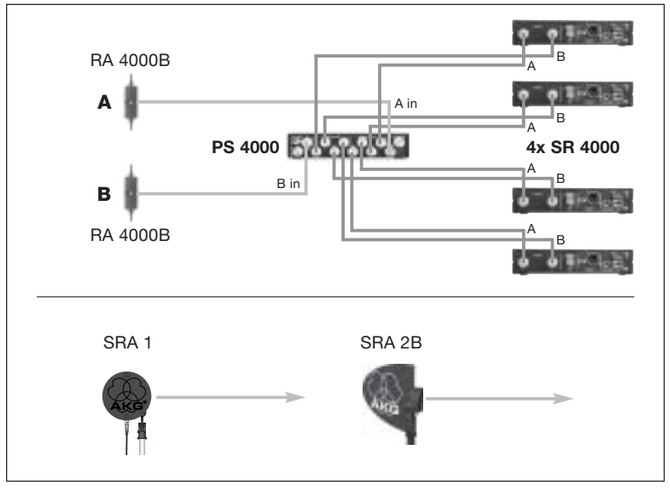
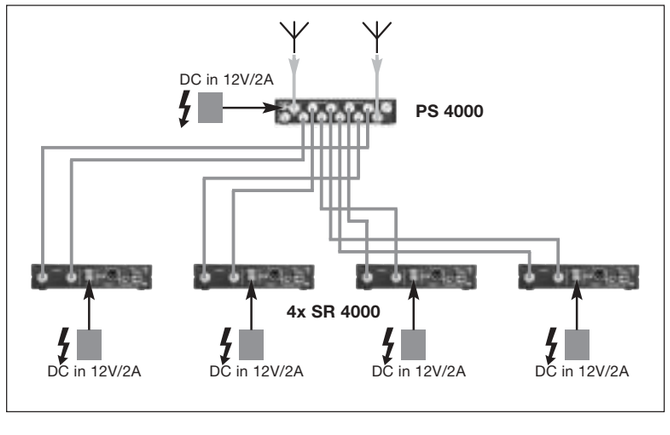


Fig. 10

Vierkanalanlage (Antennen, HF-Verbindungen)
Four-channel system (antennas, RF connections)
Système à quatre canaux (antennes, connections HF)
Sistema con quattro canali (antenne, cablaggio RF)
Sistema de cuatro canales (antenas, cableado de RF)
Sistema de quatro canais (antenas, cablagem de RF)

Fig. 12

12-Kanalanlage mit PSU 4000 (HF-Verbindungen und Stromversorgung)
12-channel system with PSU 4000 (RF and power connections)
Système à 12 canaux avec PSU 4000 (connections HF et d'alimentation)
Sistema con 12 canali e PSU 4000 (cablaggio RF e di alimentazione)
Sistema con 12 canales y PSU 4000 (cableado de RF y de alimentación)
Sistema con 12 canais e PS 4000 (cablagem de RF e de alimentação)



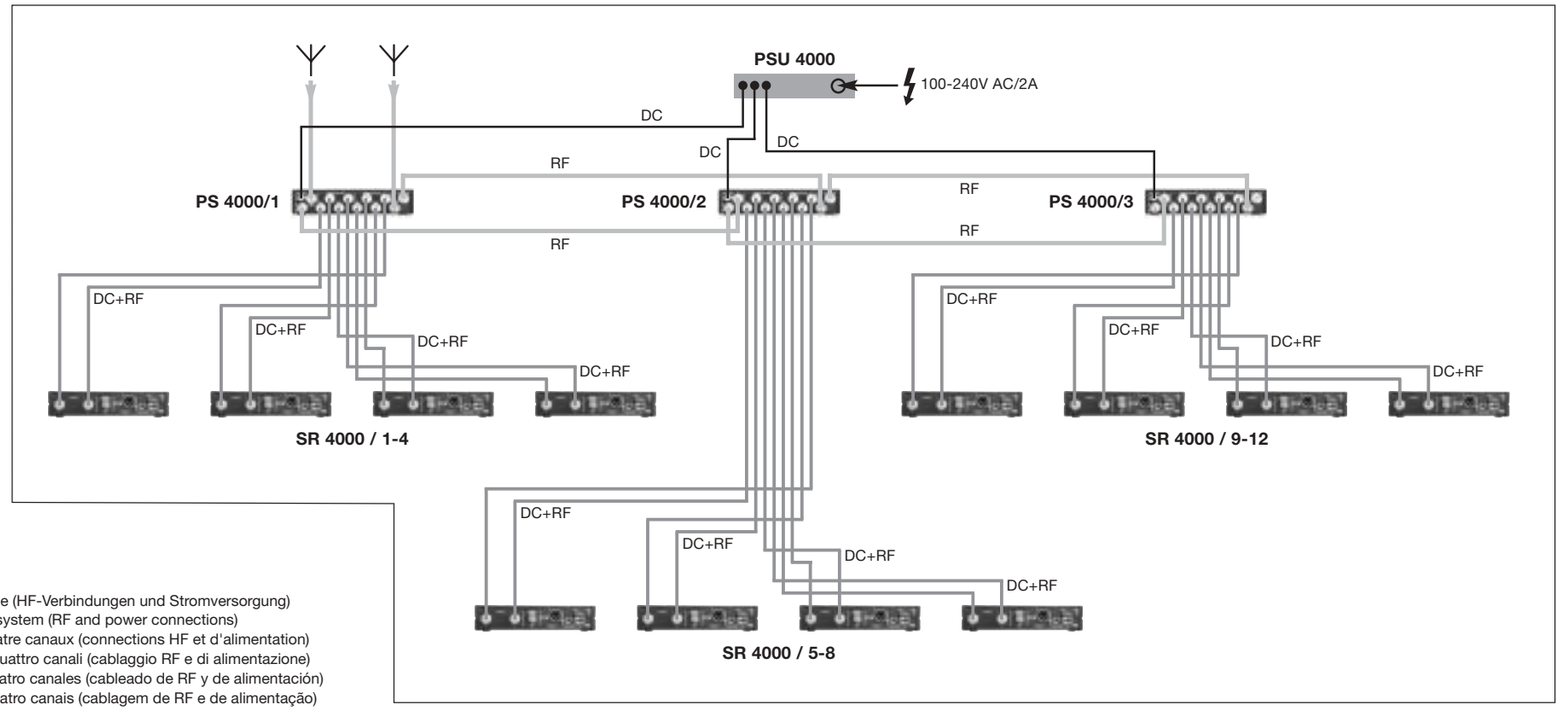


Fig. 11

Vierkanalanlage (HF-Verbindungen und Stromversorgung)
Four-channel system (RF and power connections)
Système à quatre canaux (connections HF et d'alimentation)
Sistema con quattro canali (cablaggio RF e di alimentazione)
Sistema de cuatro canales (cableado de RF y de alimentación)
Sistema de quatro canais (cablagem de RF e de alimentação)

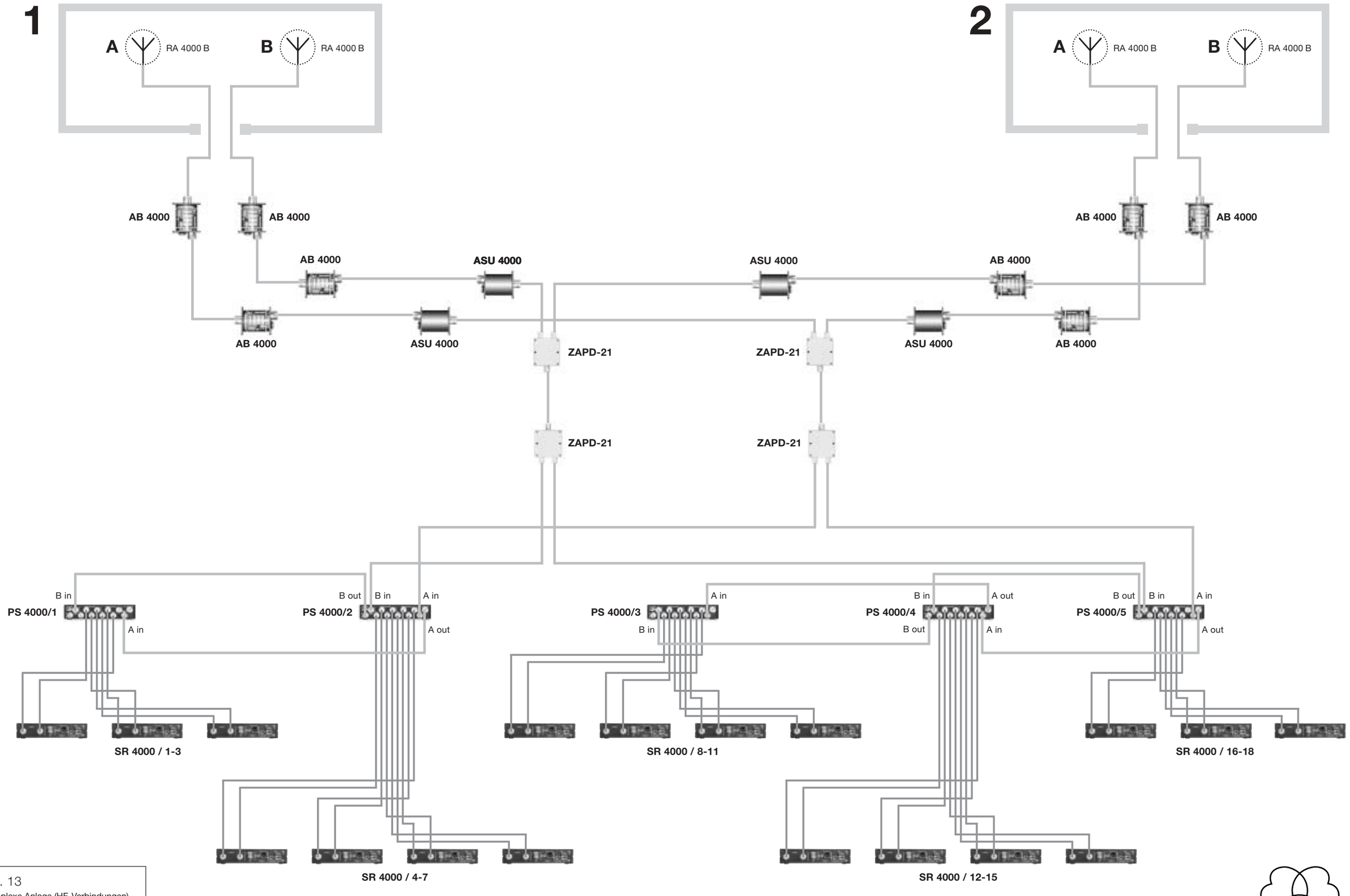


Fig. 13
Komplexe Anlage (HF-Verbindungen)
Complex system (RF connections)
Système complexe (connections HF)
Sistema complesso (cablaggio RF)
Instalación complexa (cableado de RF)
Instalação complexa (cablagem de RF)

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Microphones · Casques HiFi · Microphones sans fil · Casques sans fil · Micros-casques · Composants acoustiques
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